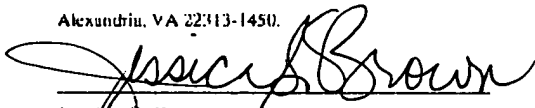




# Aug. 4, 2003

I hereby certify that on July 2, 2003, which is the date I am signing this certificate, I am depositing this document and all listed attachments with the United States Postal Service first class mail in an envelope addressed as: Mail Stop Amendment Fee, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450.

  
Jessica S. Brown

Applicant: Svensson, Lars G., et al.

Reissue Application Serial No.: 09/758,631

Reissue Application Filed: January 10, 2001

Title: SYSTEM AND METHOD FOR  
POWER-EFFICIENT CHARGING  
AND DISCHARGING OF A  
CAPACITIVE LOAD FROM A  
SINGLE SOURCE

Group Art Unit: 2838

Examiner: Adolf Berhane

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Mail Stop Amendment Fee  
Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**SUPPLEMENTAL REISSUE DECLARATION**

Dear Sir:

We, Lars G. Svensson, William C. Athas and Jeffrey G. Koller are joint inventors of the invention entitled SYSTEM AND METHOD FOR POWER-EFFICIENT CHARGING AND DISCHARGING OF A CAPACITIVE LOAD FROM A SINGLE SOURCE described and claimed in our original application serial no. 08/231,637 filed April 22, 1994 and the resulting United States Patent No. 5,473,526, which issued December 5, 1995, and also described and claimed in the reissue specification filed December 5, 1997 as application serial no. 08/986,327 and the resulting United States Patent No. RE 37,552, and also described and claimed in the reissue specification filed on January 10, 2001 as continuation application serial no. 09/758,631, which is a continuation of the aforementioned reissue application serial no. 08/986,327 filed on December 5, 1997.

We declare that every error in the patent which was corrected in the present reissue application, and is not covered by the prior declaration submitted in this application, arose without deceptive intention on the part of the applicants.

We verily believe that through error, without deceptive intent, that U.S. Patent No. 5,473,526 (the "'526 Patent") is partly inoperative or invalid by reason of our claiming less than we had a right to claim. Applicants do not believe that all errors of the '526 Patent were corrected in the first reissue proceeding resulting in RE 37,552, and we believe we are entitled to additional claims on the invention described in the reissue specification that resulted in RE 37,552.

The errors upon which this reissue is based arose through prosecution of the

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8.20.03  
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original patent application serial no. 08/231,637 due to a misunderstanding of the proper scope of our invention commensurate with the prior art. The original application resulting in the '526 Patent was filed with claims 1-11. Applicants and their counsel believed that these claims were patentable over the prior art applied by the Examiner during prosecution. Thus, no claim amendments were made.

Applicants and their counsel did not appreciate that they were in fact entitled to broader claim coverage. For example, Applicants did not appreciate that the claimed "plural capacitive elements" could be claimed more broadly without running afoul of the prior art. This error was discovered by a licensee of the assignee during a post-issuance study of the technology and the '526 patent.

A particular example of such error may be found in original Claim 1 of the '526 Patent wherein Applicants claimed as follows:

"1. A system for efficiently charging and discharging a capacitive load from a single voltage source of a first potential consisting of:

a first switch for selectively charging the load;

a second switch for selectively discharging the load;

plural capacitive elements; and

switch means for selectively connecting each of the capacitive elements to the capacitive load to gradually charge or discharge the capacitive load."

Two pieces of prior art were cited by the Examiner in the final office action during prosecution of the '526 Patent. (See Paper 11). The first piece of prior art was Fig. 2 of the '526 Patent. The second piece of prior art was U. S. Patent No. 4,107,757 (the "'757 Patent") entitled "Pulse Power Source" to Masuda. The admitted prior art cited by Applicant during prosecution of the '526 Patent (Fig. 2 of the '526 Patent) taught some of the elements of the present invention. During prosecution of the application resulting in the '526 Patent, Masuda was cited by Examiner (Paper No. 11) for the teaching that a capacitor could be used as a voltage source. Masuda was used by Examiner in combination with the admitted prior art of Fig. 2 as the basis for an obviousness rejection.

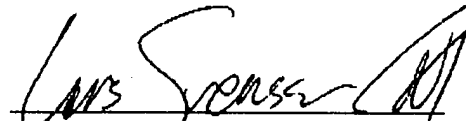
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The use of "an energy storage system that always stores energy substantially only in capacitance" and the storage of recovered energy "always...substantially in capacitance" are simply not taught in either reference. These phrases are intended to embrace capacitive systems that have a small amount of inductance due to stray or parasitic inductance or even the intentional inclusion of a small discreet inductor. Systems such as that taught by Masuda do not fall within these limitations. In systems such as Masuda, a large portion of the recovered energy is stored in inductance at some point during the recycling process.

Therefore, applicants need not have claimed plural capacitive elements as part of their claims in the '526 Patent. This is one error identified as the basis for this reissue. The claims presented in the present reissue make up this deficiency.

We hereby declare that all statements made herein of our knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Dated: Jul 16, 2003

  
Lars G. Svensson

Dated: \_\_\_\_\_, 2003

\_\_\_\_\_  
William C. Athas

Dated: \_\_\_\_\_, 2003

\_\_\_\_\_  
Jeffrey G. Koller

*Aug 4, 2003*

I hereby certify that on *Aug 4, 2003*, which is the date I am signing this certificate, I am depositing this document and all listed attachments with the United States Postal Service first class mail in an envelope addressed as: Mail Stop Amendment Fee, Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450

*Jessica S. Brown*  
Jessica S. Brown

Applicant: Svensson, Lars G., et al.  
Reissue Application Serial No.: 09/758,631  
Reissue Application Filed: January 10, 2001  
Title: SYSTEM AND METHOD FOR POWER-EFFICIENT CHARGING AND DISCHARGING OF A CAPACITIVE LOAD FROM A SINGLE SOURCE  
Group Art Unit: 2838  
Examiner: Adolf Berhane

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Dated: \_\_\_\_\_, 2003

Lars G. Svensson

Dated: July 14, 2003

William C. Athas

Dated: \_\_\_\_\_, 2003

Jeffrey G. Koller



Aug. 4, 2003

I hereby certify that on ~~July 2, 2003~~, which is the date I am signing this certificate, I am depositing this document and all listed attachments with the United States Postal Service first class mail in an envelope addressed as: Mail Stop Amendment Fee,

Commissioner for Patents, P. O. Box 1450,  
Alexandria, VA 22313-1450.

*Jessica S. Brown*  
Jessica S. Brown

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Reissue Application Serial No.: 09/758,631  
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Group Art Unit: 2838  
Examiner: Adolf Berhanc

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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Commissioner for Patents  
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Dated: , 2003

Lars G. Svensson

Dated: , 2003

William C. Athas

Dated: 7/14, 2003

  
Jeffrey G. Koller

**REISSUE**

PTO/SB/53 (02-01)

Approved for use through 01/31/2004. OMB 0651-0033

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<b>REISSUE APPLICATION: CONSENT OF ASSIGNEE; STATEMENT OF NON-ASSIGNMENT</b>		Docket Number (Optional) 61450-027
<p>This is part of the application for a reissue patent based on the original patent identified below.</p>		
Name of Patentee(s) <u>Lars G. Svensson et al.</u>		
Patent Number <u>5,473,526</u>	Date Patent Issued <u>December 5, 1995</u>	
Title of Invention <u>System and Method for Power-Efficient Charging and Discharging of a Capacitive Load from a Single Source</u>		
<p>1. <input checked="" type="checkbox"/> Filed herein is a statement under 37 CFR 3.73(b). (Form PTO/SB/96)</p> <p>2. <input type="checkbox"/> Ownership of the patent is in the inventor(s), and no assignment of the patent is in effect.</p> <p>One of boxes 1 or 2 above must be checked. If multiple assignees, complete this form for each assignee. If box 2 is checked, skip the next entry and go directly to "Name of Assignee".</p> <p>The written consent of all assignees and inventors owning an undivided interest in the original patent is included in this application for reissue.</p>		
The assignee(s) owning an undivided interest in said original patent is/are <u>University of Southern California</u> , and the assignee(s) consents to the accompanying application for reissue.		
Name of assignee/inventor (if not assigned)		
Signature <u>Dennis F. Dougherty</u>	Date <u>7/8/03</u>	
Typed or printed name and title of person signing for assignee (if assigned)  <u>Dennis F. Dougherty, Sr. Vice President, Administration</u>		

Burden Hour Statement: This form is estimated to take 0.1 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



REISSUE

PTO/SB/96 (08-00)

Approved for use through 10/31/2002. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(b)**Applicant/Patent Owner: University of Southern CaliforniaApplication No./Patent No.: 09/758,631Filed/Issue Date: January 10, 2001Entitled: System and Method for Power-Efficient Charging and Discharging of a Capacitive Load from a Single SourceUniversity of Southern California, a Corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.  
The extent (by, percentage) of its ownership interest is \_\_\_\_\_ %

in the patent application/patent identified above by virtue of either:

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 0744, Frame 0586, or for which a copy thereof is attached.

OR

This is an assignment of U.S. Pat. No. 5,473,526, for which the present application is a Continuation of Reissue Application

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

2. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

3. From: \_\_\_\_\_ To: \_\_\_\_\_  
The document was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

- ☒ Copies of assignments or other documents in the chain of title are attached.

[NOTE: A separate copy (i.e., the original assignment document or a true copy of the original document) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

7/8/03  
Date

Dennis J. Dougherty

Dennis J. Dougherty  
Typed or printed name  
Signature

Senior Vice-President of Administration

Title

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Washington, DC 20231.



\*PATENT  
ATTORNEY DOCKET NO. 06666/013001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Svensson, et al.  
Title : SYSTEM AND METHOD FOR POWER-EFFICIENT CHARGING AND  
DISCHARGING OF A CAPACITIVE LOAD FROM A SINGLE SOURCE  
Application for Reissue of U.S. Patent No. 5,473,526  
Issued : December 5, 1995  
Reissue  
Serial No.: 08/986,327  
Reissue  
Filed : 12/5/97

Asst. Commissioner of Patents and Trademarks  
Washington, DC 20231

CONSENT OF ASSIGNEE

The undersigned, whose title is supplied below, is  
empowered to act on behalf of the assignee.

The undersigned, acting on behalf of the assignee,  
hereby offers to surrender the above-identified Letters Patent,  
and consents to the accompanying reissue application. The  
undersigned further requests that Letters Patent be reissued to  
it for the same invention upon the foregoing amended application.

I hereby declare that all statements made herein of my  
own knowledge are true and that all statements made on  
information and belief are believed to be true; and further that  
these statements were made with the knowledge that willful false

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above and is addressed to the Assistant Commissioner for Patents,  
Washington, D.C. 20231.

Duncan L. Clark  
DUNCAN L. CLARK

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Date: 7/2/98

Dennis F. Dougherty  
Name: Dennis F. Dougherty  
Title: Sr. Vice President, Administration

46834



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Filed : 12/5/97

Commissioner of Patents and Trademarks  
Washington, DC 20231

STATEMENT UNDER 3.73(b)

Under 37 CFR §3.73(b), the University of Southern California, a corporation of California, certifies that it is the assignee of the entire right, title and interest in the patent identified above by virtue of an assignment from the inventors. The assignment was recorded in the Patent and Trademark Office at Reel 0744, Frame 0586, on June 17, 1994.

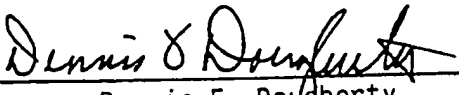
The undersigned has reviewed all the documents in the chain of title of the patent, and, to the best of undersigned's knowledge and belief, title is in the assignee identified above.

"EXPRESS MAIL" Mailing Label Number EM 32064078945  
Date of Deposit 7-8-98  
I hereby certify under 37 CFR 1.10 that this correspondence is being deposited with the United States Postal Service as "Express Mail Post Office To Addressee" with sufficient postage on the date indicated above and is addressed to the Assistant Commissioner for Patents, Washington, D.C. 20231.

Heenan J. Clark  
DUNCAN I. CLARK

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Date: 7/2/98

  
Name: Dennis F. Dougherty  
Title: Sr. Vice President, Administration



# RECORDATION FORM COVER SHEET PATENTS ONLY

 Substitute Form F  
 orney Docket No.: 06666/01300

Assistant Commissioner for Patents: Please record the attached copies of an original document.

1. Name of conveying party(ies):  
 Lars Svensson  
 William C. Athas  
 Jeffrey G. Koller  
 Additional name(s) attached? ☐ Yes ☒ No
  2. Name and address of receiving party(ies):  
 University of Southern California  
 3716 South Hope Street  
 Los Angeles, CA 90007-4344  
 Additional names/addresses attached? ☐ Yes ☒ No
  3. Nature of conveyance:  
☒ Assignment  
☐ Merger  
☐ Security Agreement  
☐ Change of Name  
☐ Other:
- Execution Date: 6/9/98; 6/8/98; and 6/8/98,  
 respectively
4. Application number(s) or patent number(s):  
 If this document is being filed with a new application, the execution date of the application is: 6/9/98; 6/8/98; and 6/8/98 respectively.  
 A. Patent Application No.(s):  
 Serial No. 08/986,327, filed 12/5/97  
 B. Patent No.(s):  
 Additional numbers attached? ☐ Yes ☒ No
  5. Name/address of party to whom correspondence concerning document should be mailed:  
 Scott C. Harris, Reg. No. 32,030  
 Fish & Richardson P.C.  
 4225 Executive Square, Suite 1400  
 La Jolla, CA 92037
  6. Total number of applications/patents involved: 1
  7. Total fee (37 CFR 3.41): \$40  
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## ASSIGNMENT

Date: 6/9/98

LARS SVENSSON

WILLIAM C. ATHAS

JEFFREY G. KOLLER

## ASSIGNMENT

For valuable consideration, we, Lars Svensson, of Lund, Sweden; William C. Athas, of  
Jeffrey G. Koller, of; hereby assign to University of Southern  
California, a California corporation having a place of business at 3716 South Hope Street, Los Angeles,  
California 90007-4344, and its successors and assigns (collectively hereinafter called "the Assignee"), the entire  
right, title and interest throughout the world in the inventions and improvements which are subject of an  
application for United States Patent signed by us this day, entitled SYSTEM AND METHOD FOR POWER-  
EFFICIENT CHARGING AND DISCHARGING OF A CAPACITIVE LOAD FROM A SINGLE SOURCE,  
filed December 5, 1997, and assigned U.S. Serial Number 08/986,327, and we authorize and request the  
attorneys appointed in said application to hereafter complete this assignment by inserting above the filing date  
and serial number of said application when known; this assignment including said application, any and all  
United States and foreign patents, utility models, and design registrations granted for any of said inventions  
or improvements, and the right to claim priority based on the filing date of said application under the  
International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European  
Patent Convention, and all other treaties of like purposes; and we authorize the Assignee to apply in all  
countries in our name or in its own name for patents, utility models, and design registrations and like rights  
of exclusion and for inventors' certificates for said inventions and improvements; and we agree for ourselves  
and our respective heirs, legal representatives and assigns, without further compensation to perform such lawful  
acts and to sign such further applications, assignments, Preliminary Statements and other lawful documents as  
the Assignee may reasonably request to effectuate fully this assignment.

Date: \_\_\_\_\_

Date: 6/8/98Date: 6/8/98

LARS SVENSSON

WILLIAM C. ATHAS

JEFFREY G. KOLLER

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